



# OPTO-ELECTRONIC PROTECTIVE DEVICES

## PRODUCTS AT A GLANCE

Safety laser scanners, safety light curtains, safety camera systems, multiple light beam safety devices, single-beam photoelectric safety switches, mirror columns and device columns

**SICK**  
Sensor Intelligence.



## OPTO-ELECTRONIC PROTECTIVE DEVICES

Opto-electronic protective devices from SICK are the first choice for maximum machine and system productivity. Unlike fences and doors, they do not disrupt handling or material transport and allow a better view into the machine room. SICK's comprehensive portfolio is ideal for hazardous point protection, access protection, and hazardous area protection. The SICK's proprietary interface, EFI, offers additional process optimization.

<b>General information</b> . . . . .	<b>3</b>
<b>Safety laser scanners</b> . . . . . S300 Mini, S300, microScan3, S3000	<b>8</b>
<b>Safety light curtains</b> . . . . . deTec4, deTec2, miniTwin, C4000, C2000	<b>14</b>
<b>Safety camera systems</b> . . . . . V200, V300	<b>19</b>
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## Applications

Whether for persons, machines or other objects, in automated production and logistics processes, safety is the highest priority. For decades, SICK has been producing pioneering products for the protection of hazardous areas and hazardous points as well as for access protection.

Use our Safety Solution assistant. It guides you from your safety task to a product recommendation for safety sensors and safe control solutions.

→ [www.sick.com/safetyplus-safety-solution-assisant](http://www.sick.com/safetyplus-safety-solution-assisant)



### Hazardous point protection with finger or hand detection

The worker works very close to the hazardous point of the machine here. The stopping time is very short. With a detection capability of 14 mm, individual fingers are reliably detected.

#### Benefits

- Enables very frequent operator/machine interaction and an unimpeded view
- The distance to the hazardous point is reduced to a minimum
- Supports high productivity

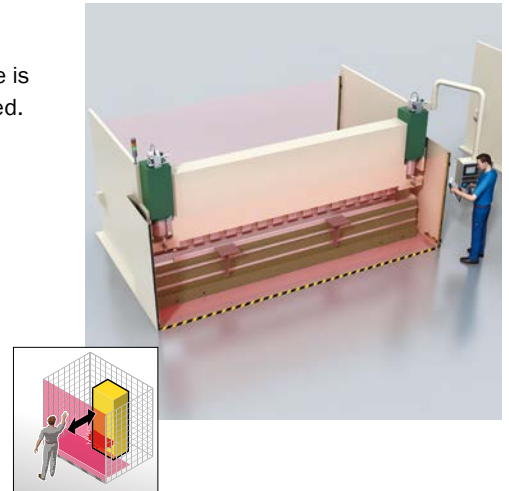


## Hazardous point protection with hand and person detection

The worker works close to the hazardous point of the machine. The stopping time is very short. With a detection capability of up to 40 mm, hands are reliably detected.

### Benefits

- Enables unrestricted access, frequent interaction and an unimpeded view into the machine
- With presence detection, automatic restart can be initiated

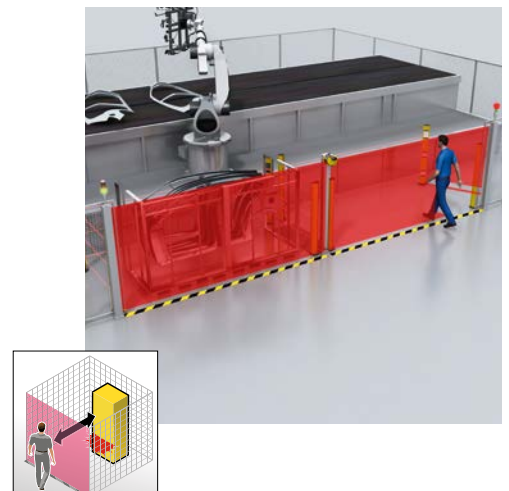


## One-sided access protection with person detection

The worker interacts with the machine regularly, but not frequently. Safety laser scanners or multiple-beam systems reliably detect persons when entering a hazardous area.

### Benefits

- Enables unrestricted access and an unimpeded view into the machine

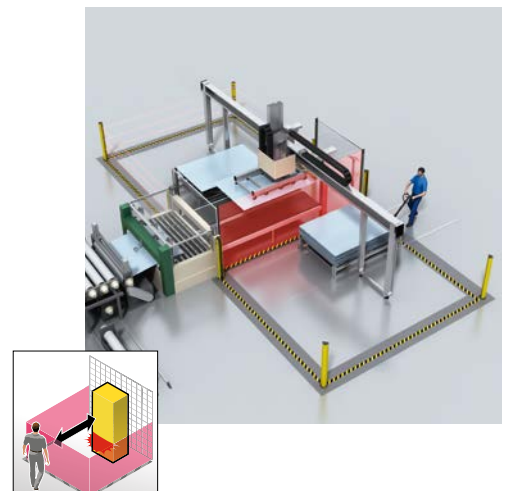


## Multi-sided access protection with person detection

The worker interacts with the machine regularly, but not frequently. Safety laser scanners or multiple-beam systems detect a person entering the hazardous area from several sides.

### Benefits

- Enables unrestricted access to the machine from several sides and an unimpeded view into the machine

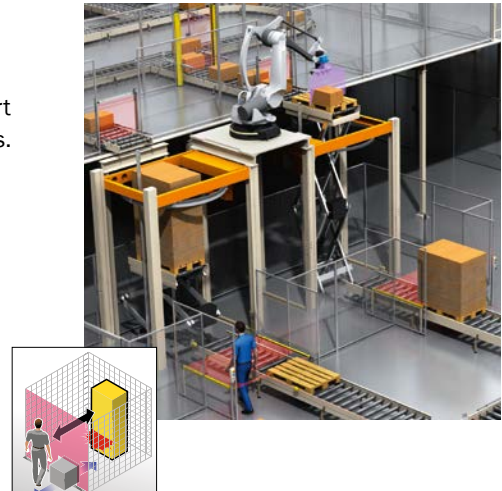


### One-sided access protection with differentiation between persons and material

For muting, entry/exit monitoring and machines with automatic material transport systems. Safety laser scanners or multiple-beam systems reliably detect persons.

#### Benefits

- Unimpeded material transport supports high productivity

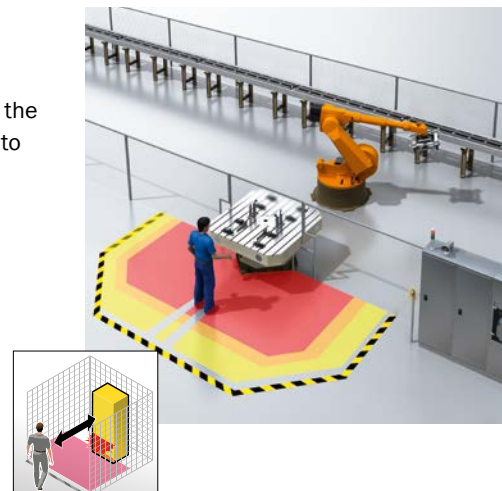


### Stationary hazardous area protection with person detection in the presence

The worker interacts with the machine regularly, but not frequently. The view into the hazardous walk-through area can be restricted. With a detection capability of up to 70 mm and respective mounting height, human legs are reliably detected.

#### Benefits

- Combined approach and presence monitoring
- Enables unrestricted access to the machine

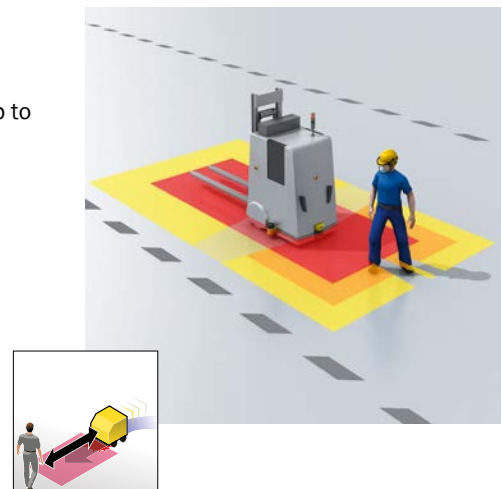


### Mobile hazardous area protection with person detection when approaching





Protection of persons while vehicles are moving. With a detection capability of up to 70 mm and respective mounting height, human legs are reliably detected.

#### Benefits

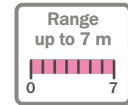
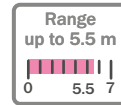
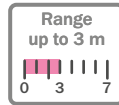
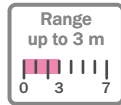
- Reduced downtimes and wear caused by frequent braking
- The minimum distance can be automatically adjusted to the speed



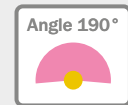
# AN OVERVIEW OF THE MOST IMPORTANT PROPERTIES OF OPTO-ELECTRONIC PROTECTIVE DEVICES

Safety laser scanners				
				
S300 MINI + EFL GERÄT	S300	micro-Scan3	S3000	
Ultra-compact - focused on the essentials	Compact - all functions in a single device	The new generation of safety laser scanners	Powerful and modular	

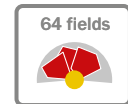
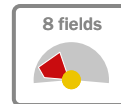
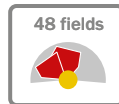
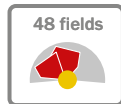
**Protective field range**  
The protective field range describes the maximum range of the monitored field.



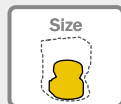
**Scanning angle**  
The scanning angle describes the maximum viewing angle of the scanner.



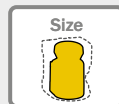
**Fields**  
The number of fields indicates how flexibly the scanner can be adapted to different process phases.



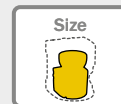
**Dimensions:**  
width x height x depth  
The smaller the device, the simpler it is to integrate in a system.



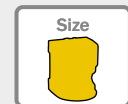
102 mm x 116 mm x 104 mm



102 mm x 152 mm x 106 mm

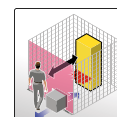
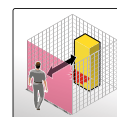
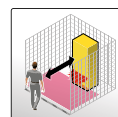
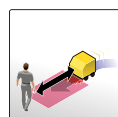


112 mm x 135 mm x 111 mm



155 mm x 185 mm x 160 mm

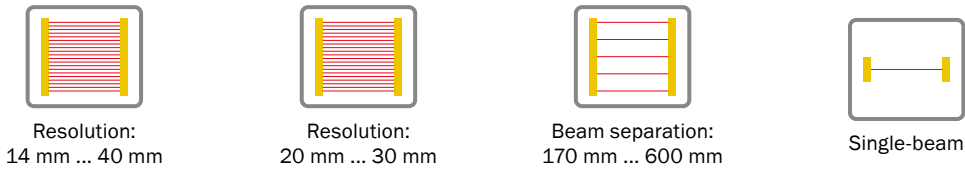
**Safety tasks**



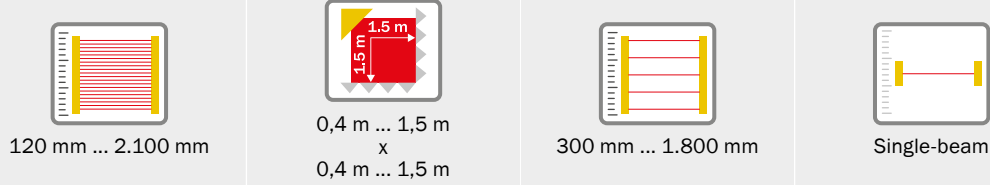
Detailed information	→ 8	→ 8	→ 9	→ 10
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	Safety light curtains	Safety camera systems	Multiple light beam safety devices	Single-beam photoelectric safety switches
	   	 	 	  
	Small, compact or extremely robust for individual application solutions	Simple commissioning thanks to self-teaching protective field	Resistant and robust, even for special ambient conditions	Easy integration due to small, compact designs with maximum scanning range

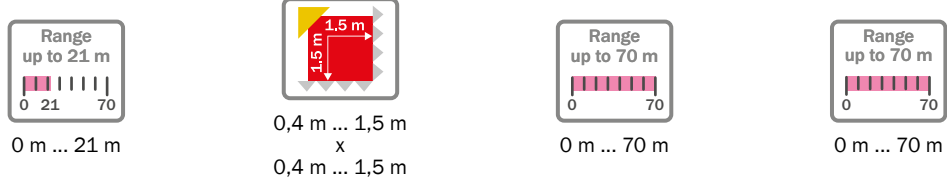
**Resolution / Beam separation**  
The safety task determines the necessary resolution of the application.



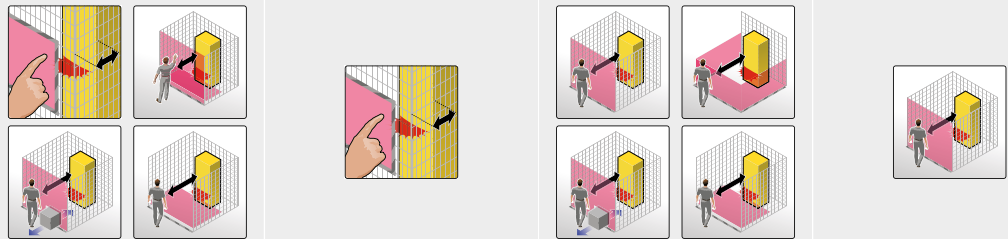
**Maximum protective field height**  
Specifies the maximum detection height for the protective field.



**Maximum scanning range**  
The scanning range indicates how far apart the sender and receiver can be.



**Safety tasks**



Detailed information

→ 14

→ 19

→ 20

→ 24

				
	<b>S300 Mini Standard</b>	<b>S300 Mini Remote</b>	<b>S300 Standard</b>	
	Economical yet reliable	Very high functionality in mini format	Economical yet reliable	

**Technical data overview**

<b>Protective field range</b>	1 m / 2 m / 3 m	2 m / 3 m	2 m / 3 m
<b>Warning field range</b>	8 m	8 m	8 m
<b>Scan angle</b>	270°	270°	270°
<b>Number of fields</b>	3	48	3
<b>Number of monitoring cases</b>	1	32	1
<b>Resolution</b>	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable
<b>OSSD pairs</b>	1	-	1
<b>Response time</b>	80 ms	80 ms	80 ms
<b>Safe device communication</b>	-	EFI	EFI

**At a glance**

- Ultra-compact design
- 1 field set
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)
- Easy-to-configure fields and functions

- Can only be used in EFI system network, e.g., with a Flexi Soft safety controller or another safety laser scanner
- Ultra-compact design
- Up to 16 switchable field sets
- Selectable resolution for hand, leg or body detection
- Extended system solutions in combination with Flexi Soft safety controller

- Compact design
- 1 field set
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications



Detailed information	<a href="http://www.sick.com/S300_Mini_Standard">→ www.sick.com/S300_Mini_Standard</a>	<a href="http://www.sick.com/S300_Mini_Remote">→ www.sick.com/S300_Mini_Remote</a>	<a href="http://www.sick.com/S300_Standard">→ www.sick.com/S300_Standard</a>
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**S300 Advanced**

Optimize production processes safely



**S300 Professional**

High-performance – the right protection for any speed



**S300 Expert**

Flexible and pioneering – for challenging applications



**microScan3 Core**

The new generation of safety laser scanners

2 m / 3 m	2 m / 3 m	2 m / 3 m	4 m / 5.5 m
8 m	8 m	8 m	40 m
270°	270°	270°	275°
12	24	48	8
4	32	32	2
30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, 200 mm, configurable
1	1	1	1
80 ms	80 ms	80 ms	70 ms
EFI	EFI	EFI	–

- Compact design
- 4 switchable field sets
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications



→ [www.sick.com/S300\\_Advanced](http://www.sick.com/S300_Advanced)

- Compact design
- 8 switchable field sets
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Incremental encoder inputs for speed-dependent field switching
- Measured data output via RS-422



→ [www.sick.com/S300\\_Professional](http://www.sick.com/S300_Professional)

- Compact design
- 16 switchable field sets
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Incremental encoder inputs for speed-dependent field switching
- Extended measured data output via RS-422 with landmark recognition



→ [www.sick.com/S300\\_Expert](http://www.sick.com/S300_Expert)

- Innovative scanning technology safeHDDM™
- Compact, rugged metal housing
- High reliability against dust and ambient light
- System plug M12, 8-pin, with configuration memory
- Intuitive configuration using the Safety Designer software
- Brilliant multicolor display



→ [www.sick.com/microScan3\\_Core](http://www.sick.com/microScan3_Core)

				
	<b>S3000 Standard</b>	<b>S3000 Advanced</b>	<b>S3000 Professional</b>	
	Economical yet reliable	Optimize production processes safely	Flexible high-performance - the right protection for any speed	

**Technical data overview**

<b>Protective field range</b>	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m
<b>Warning field range</b>	49 m	49 m	49 m
<b>Scan angle</b>	190°	190°	190°
<b>Number of fields</b>	4	12	24
<b>Number of monitoring cases</b>	1	4	16
<b>Resolution</b>	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable
<b>OSSD pairs</b>	1	1	1
<b>Response time</b>	60 ms	60 ms	60 ms
<b>Safe device communication</b>	EFI	EFI	EFI

**At a glance**

- 1 field set
- Configuration memory integrated in the system plug
- Interface (EFI) for reliable SICK device communication
- Selectable resolution for hand, leg or body detection
- Simultaneous monitoring of up to 4 protective fields
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)



- 4 switchable field sets
- Configuration memory integrated in the system plug
- Interface (EFI) for reliable SICK device communication
- Selectable resolution for hand, leg or body detection
- Simultaneous monitoring of up to 4 protective fields
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)



- 8 switchable field sets
- Configuration memory integrated in the system plug
- Interface (EFI) for reliable SICK device communication
- Incremental encoder inputs for speed-dependent field switching
- Measured data output via RS-422
- Simultaneous monitoring of up to 4 protective fields
- Monitoring of the maximum speed of an AGV



Detailed information	<a href="http://www.sick.com/S3000_Standard">→ www.sick.com/S3000_Standard</a>	<a href="http://www.sick.com/S3000_Advanced">→ www.sick.com/S3000_Advanced</a>	<a href="http://www.sick.com/S3000_Professional">→ www.sick.com/S3000_Professional</a>
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**S3000 Expert**

Safety gaps have no chance – with 64 fields



**S3000 Remote**

The scanner for more safety



**S3000 PROFINET IO Advanced**

Always available – safety technology in your network



**S3000 PROFINET IO Professional**

Always available – safety technology in your network

4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m	4 m / 5.5 m / 7 m
49 m	49 m	49 m	49 m
190°	190°	190°	190°
64	64	8	16
32	32	4	16
30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable
1	1	–	–
60 ms	60 ms	60 ms	60 ms
EFI	EFI	PROFINET PROFI-safe	PROFINET PROFI-safe

- 32 switchable field sets
- Configuration memory integrated in the system plug
- Interface (EFI) for reliable SICK device communication
- Incremental encoder inputs for speed-dependent field switching
- Extended measured data output via RS-422 with field marker detection
- Simultaneous monitoring of up to 4 protective fields



→ [www.sick.com/S3000\\_Expert](http://www.sick.com/S3000_Expert)

- Can be used only in the EFI system network, e.g. with a Flexi Soft safety controller or another safety laser scanner
- Up to 32 switchable field sets
- Configuration memory integrated in the system plug
- Measured data output via RS-422
- Simultaneous monitoring of up to 4 protective fields
- Contour as reference for vertical applications



→ [www.sick.com/S3000\\_Remote](http://www.sick.com/S3000_Remote)

- Direct integration in PROFINET IO safe bus system
- 4 switchable field sets
- Managed 2-Port switch for copper or optical fiber based conductors
- Configuration memory integrated in the system plug
- Remote diagnostics and configuration through safety controller
- Simultaneous monitoring of 2 protective fields



→ [www.sick.com/S3000\\_PROFINET\\_IO\\_Advanced](http://www.sick.com/S3000_PROFINET_IO_Advanced)

- Direct integration in PROFINET IO safe bus system
- 8 switchable field sets
- Managed 2-Port switch for copper or optical fiber based conductors
- Configuration memory integrated in the system plug
- Remote diagnostics and configuration through safety controller
- Simultaneous monitoring of 2 protective fields



→ [www.sick.com/S3000\\_PROFINET\\_IO\\_Professional](http://www.sick.com/S3000_PROFINET_IO_Professional)

	 <p><b>S3000 Anti Collision</b></p>	 <p><b>S3000 Cold Store</b></p>
	<p>Maximum productivity by safe collision protection of up to 15 meters</p>	<p>Reliable safety for tough requirements in cold storage</p>

Technical data overview		
Protective field range	7 m	7 m
Warning field range	-	49 m
Scan angle	190°	180°
Number of fields	32	12
Number of monitoring cases	32	4
Resolution	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable	30 mm, 40 mm, 50 mm, 70 mm, 150 mm, configurable
OSSD pairs	1	1
Response time	120 ms	60 ms
Safe device communication	EFI	EFI

**At a glance**




- Collision protection of up to 15 m and person protection of up to 7 m in one device
- Can only be used in EFI system network with modular Flexi Soft safety controller
- Up to 16 switchable field sets
- Configuration memory integrated in the system plug
- Extended measurement data output via RS-422 with landmark recognition

- Designed and certified for temperatures down to -30 °C
- Modified housing with integrated temperature controller
- IP 67 enclosure rating
- 4 switchable field sets
- Interface (EFI) for reliable SICK device communication
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications



<p>Detailed information</p>	<p>→ <a href="http://www.sick.com/S3000_Anti_Collision">www.sick.com/S3000_Anti_Collision</a></p>	<p>→ <a href="http://www.sick.com/S3000_Cold_Store">www.sick.com/S3000_Cold_Store</a></p>
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	<b>deTec4 Prime</b>	<b>deTec4 Core</b>	<b>deTec2 Core</b>	
	Easy commissioning, intuitive wiring, and proven reliability	Efficient integration. Quick installation. Simply safe.	Simply safe: easily operated and rugged in everyday use	

**Technical data overview**

<b>Scanning range</b>	0.15 m ... 21 m	0 m ... 10 m	0 m ... 10 m
<b>Protective field height</b>	300 mm ... 2,100 mm	300 mm ... 2,100 mm	300 mm ... 2,100 mm
<b>Resolution</b>	14 mm / 30mm	14 mm / 30 mm	14 mm / 30 mm
<b>Type</b>	Type 4 (IEC 61496)	Type 4 (IEC 61496)	Type 2 (IEC 61496)
<b>Safety integrity level</b>	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL1 (IEC 61508) SILCL1 (EN 62061)
<b>Performance level</b>	PL e (EN ISO 13849)	PL e (EN ISO 13849)	PL c (EN ISO 13849)
<b>Enclosure rating</b>	IP 65 (EN 60529) IP 67 (EN 60529)	IP 65 (EN 60529) IP 67 (EN 60529)	IP 65 (EN 60529) IP 67 (EN 60529)
<b>Ambient operating temperature</b>	-30 °C ... +55 °C	-30 °C ... +55 °C	-30 °C ... +55 °C

**At a glance**

- Option of cascading up to three deTec4 Prime safety light curtains, beam coding
- Restart interlock, external device monitoring, status output
- Integrated laser alignment aid
- Flexi-Loop-ready



- Absence of blind zones
- Automatic calibration on the protective field width
- Flexi-Loop-ready



- Absence of blind zones
- Automatic calibration on the protective field width
- Flexi-Loop-ready

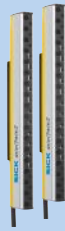


Detailed information	→ <a href="http://www.sick.com/deTec4_Prime">www.sick.com/deTec4_Prime</a>	→ <a href="http://www.sick.com/deTec4_Core">www.sick.com/deTec4_Core</a>	→ <a href="http://www.sick.com/deTec2_Core">www.sick.com/deTec2_Core</a>
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**miniTwin4**

The smallest light curtain with the highest protection level, PL e



**miniTwin2**

Small design, great flexibility, and universal possibilities



**C4000 Advanced**

Increase productivity with greater machine safety

0 m ... 4 m	0 m ... 6 m	0 m ... 19 m
120 mm ... 1,200 mm	120 mm ... 1,200 mm	150 mm ... 1,800 mm
14 mm / 24 mm / 34 mm	14 mm / 24 mm / 34 mm	14 mm ... 40 mm
Type 4 (IEC 61496)	Type 2 (IEC 61496)	Type 4 (IEC 61496)
SIL3 (IEC 61508)	SIL1 (IEC 61508)	SIL3 (IEC 61508)
SILCL3 (EN 62061)	SILCL1 (EN 62061)	SILCL3 (EN 62061)
PL e (EN ISO 13849)	PL c (EN ISO 13849)	PL e (EN ISO 13849)
IP 65 (EN 60529)	IP 65 (EN 60529)	IP 65 (EN 60529)
-20 °C ... +55 °C	-20 °C ... +55 °C	0 °C ... +55 °C

- Compact cross section (15 mm x 32 mm) with no dead zones
- Twin stick: sender and receiver in a single housing – cascable
- Intelligent, software-free configuration of external device monitoring and reset function
- M12, 5-pin device connection



→ [www.sick.com/miniTwin4](http://www.sick.com/miniTwin4)

- Compact cross section (15 mm x 32 mm) with no dead zones
- Twin stick: sender and receiver in a single housing – cascable
- Intelligent, software-free configuration of external device monitoring and reset function
- M12 connecting device, 5-pin



→ [www.sick.com/miniTwin2](http://www.sick.com/miniTwin2)

- Various options for blanking objects: fixed, floating, or teach-in
- 7-segment display
- PSDI mode with the UE402 switching amplifier
- External device monitoring (EDM) and restart interlock (RES)
- Beam coding for correct system allocation
- Configuration and diagnostics via PC
- Cascade up to three systems



→ [www.sick.com/C4000\\_Advanced](http://www.sick.com/C4000_Advanced)

			
	<b>C4000 Fusion</b>	<b>C4000 Palletizer</b>	<b>C4000 Entry/Exit</b>
	Multifunctional and user friendly, high-level of availability and safe	Innovative muting alternative for access protection	Revolutionary access protection that differentiates between people and material

Technical data overview

Scanning range	1.5 m ... 19 m	0.5 m ... 6 m	0.5 m ... 19 m
Protective field height	300 mm ... 1,800 mm	750 mm ... 1,800 mm	900 mm ... 1,500 mm
Resolution	20 mm	30 mm / 40 mm	20 mm
Type	Type 4 (IEC 61496)	Type 4 (IEC 61496)	Type 4 (IEC 61496)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)
Performance level	PL e (EN ISO 13849)	PL e (EN ISO 13849)	PL e (EN ISO 13849)
Enclosure rating	IP 65 (EN 60529)	IP 65 (EN 60529)	IP 65 (IEC 60529)
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C	0 °C ... +55 °C

At a glance

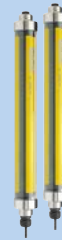
	<ul style="list-style-type: none"> <li>• Self-teaching, dynamic blanking for application-specific access protection</li> <li>• Hand and area protection in dirty environments</li> <li>• Multiple sampling</li> <li>• Reduced resolution</li> <li>• Fixed blanking</li> <li>• Two virtual photoelectric sensors</li> <li>• Integrated laser alignment</li> </ul>	<ul style="list-style-type: none"> <li>• Self-teaching, dynamic blanking detects goods and pallets</li> <li>• Direction recognition</li> <li>• Multiple sampling</li> <li>• Reduced resolution</li> <li>• Muting alternative</li> <li>• Beam coding</li> <li>• Object gap suppression</li> </ul>	<ul style="list-style-type: none"> <li>• Self-teaching, dynamic blanking</li> <li>• 7-segment display</li> <li>• Multiscan function increases availability</li> <li>• External device monitoring (EDM), restart interlock</li> <li>• Beam coding</li> <li>• Configuration and diagnostics via PC</li> </ul>
			
Detailed information	→ <a href="http://www.sick.com/C4000_Fusion">www.sick.com/C4000_Fusion</a>	→ <a href="http://www.sick.com/C4000_Palletizer">www.sick.com/C4000_Palletizer</a>	→ <a href="http://www.sick.com/C4000_Entry_Exit">www.sick.com/C4000_Entry_Exit</a>





**C4000 Micro in IP69K Housing**

Comprehensive safety for stringent hygiene and cleaning requirements



**C2000 Standard in IP69K Housing**

Cost efficient solution for industries with high wash-down requirements

0 m ... 14.5 m	0 m ... 4.5 m / 2.5 m ... 14.5 m
150 mm ... 1,800 mm	150 mm ... 1,200 mm
14 mm / 30 mm	30 mm
Type 4 (IEC 61496)	Type 2 (IEC 61496)
SIL3 (IEC 61508)	SIL1 (IEC 61508)
SILCL3 (EN 62061)	SILCL1 (EN 62061)
PL e (EN ISO 13849)	PL c (EN ISO 13849)
IP 69K, IP 67, IP 66, IP 65 (IEC 60529)	IP 69K, IP 67, IP 66, IP 65 (EN 60529)
-30 °C ... +55 °C	0 °C ... +55 °C

- Withstands wash-down pressure up to 100 bar and water temperature up to 80 °C
- ECOLAB and Diversey certified
- Resistant steel materials
- Ventilation valve prevents fogging of the front screen
- Smooth surfaces prevent accumulation of bacteria
- Compact design up to 1,800 mm protective field height



→ [www.sick.com/C4000\\_Micro\\_in\\_IP69K\\_Housing](http://www.sick.com/C4000_Micro_in_IP69K_Housing)




- Withstands wash-down pressure up to 100 bar and water temperature up to 80 °C
- ECOLAB and Diversey certified
- Resistant steel materials
- Ventilation valve prevents fogging of the front screen
- Smooth surfaces prevent accumulation of bacteria
- Compact design



→ [www.sick.com/C2000\\_Standard\\_in\\_IP69K\\_Housing](http://www.sick.com/C2000_Standard_in_IP69K_Housing)



			
	<b>deTec4 Core Ex</b>	<b>C4000 Advanced Ex</b>	<b>C4000 Advanced ATEX II 3G/3D</b>
	Safety in explosive environments	Safety in explosive environments	Total flexibility – even in explosive environments

Technical data overview			
Scanning range	0 m ... 8 m	0 m ... 16 m	0 m ... 19 m
Protective field height	600 mm ... 1,500 mm	600 mm / 900 mm / 1,200 mm	450 mm ... 1,800 mm
Resolution	30 mm	30 mm	14 mm / 30 mm / 40 mm
Type	Type 4 (IEC 61496)	Type 4 (IEC 61496)	Type 4 (IEC 61496)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)
Performance level	PL e (EN ISO 13849)	PL e (EN ISO 13849)	PL e (EN ISO 13849)
Enclosure rating	IP 66 (EN 60529)	IP 66 (EN 60529)	IP 65 (EN 60529)
Ambient operating temperature	-20 °C ... +55 °C	0 °C ... +55 °C	0 °C ... +55 °C

At a glance			
	<ul style="list-style-type: none"> <li>• ATEX for gas: II 2 G Ex d IIB T6 Gb</li> <li>• ATEX for dust: II 2 D Ex tb IIIC T56°C Db</li> <li>• NFPA 70/NEC 500 Class I, Div. 1, Groups C and D</li> <li>• NFPA 70/NEC 500 Class II, Div. 1, Groups E, F and G</li> <li>• NFPA 70/NEC 500 Class III, Div. 1</li> </ul>	<ul style="list-style-type: none"> <li>• ATEX for gas: II 2 G Ex d IIB T6 Gb</li> <li>• ATEX for dust: II 2 D Ex tb IIIC T56°C Db</li> <li>• NFPA 70/NEC 500 Class I, Div. 1, Groups C and D</li> <li>• NFPA 70/NEC 500 Class II, Div. 1, Groups E, F and G</li> <li>• NFPA 70/NEC 500 Class III, Div. 1</li> </ul>	<ul style="list-style-type: none"> <li>• ATEX II 3G/3D (2/22 zones)</li> <li>• Labelling Gas: Ex nA op is IIC T4 0°C&lt;Ta&lt;55°C Gc X</li> <li>• Labelling Dust: Ex tD A22 IP65 T123°C X</li> <li>• 7-segment display</li> <li>• External device monitoring (EDM) and restart interlock (RES)</li> <li>• Beam coding for correct system allocation</li> <li>• Configuration and diagnostics via PC</li> </ul>
			
Detailed information	→ <a href="http://www.sick.com/deTec4_Core_Ex">www.sick.com/deTec4_Core_Ex</a>	→ <a href="http://www.sick.com/C4000_Advanced_Ex">www.sick.com/C4000_Advanced_Ex</a>	→ <a href="http://www.sick.com/C4000_Advanced_ATEX_II_3G_3D">www.sick.com/C4000_Advanced_ATEX_II_3G_3D</a>

	 <p><b>V300 Work Station Extended</b></p>	 <p><b>V200 Work Station Extended</b></p>
	Perfect protection with minimal space requirements	Perfect protection with minimal space requirements

Technical data overview		
Type	Type 3 (IEC 61496)	Type 2 (IEC 61496)
Safety integrity level	SIL2 (IEC 61508) SILCL2 (EN 62061)	SIL1 (IEC 61508) SILCL1 (EN 62061)
Category	Category 3 (EN ISO 13849)	Category 2 (EN ISO 13849)
Performance level	PL d (EN ISO 13849)	PL c (EN ISO 13849)
Resolution	20 mm, 24 mm, 30 mm	20 mm, 24 mm, 30 mm
Maximum protective field range	1.41 m, 1.7 m, 2.12 m	1.41 m, 1.7 m, 2.12 m
Optical field of view size	1 m x 1 m 1.2 m x 1.2 m 1.5 m x 1.5 m	1 m x 1 m 1.2 m x 1.2 m 1.5 m x 1.5 m
Response time	≤ 20 ms	≤ 20 ms

At a glance		
	<ul style="list-style-type: none"> <li>• One device only: integrated sender and receiver</li> <li>• Intuitive one-button operation</li> <li>• Automatic alignment</li> <li>• Synchronization of 2 systems</li> <li>• Restart/Reset, EDM integrated</li> </ul>	<ul style="list-style-type: none"> <li>• One device only: integrated sender and receiver</li> <li>• Intuitive one-button operation</li> <li>• Automatic alignment</li> <li>• Synchronization of 2 systems</li> <li>• Restart/Reset, EDM integrated</li> </ul>
		

Detailed information	<a href="http://www.sick.com/V300_Work_Station_Extended">→ www.sick.com/ V300_Work_Station_Extended</a>	<a href="http://www.sick.com/V200_Work_Station_Extended">→ www.sick.com/ V200_Work_Station_Extended</a>
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	<b>M4000 Standard</b>	<b>M4000 Standard A/P</b>	
	High efficient solutions with maximum availability	Intelligent wiring and maximum availability	

**Technical data overview**

<b>Type</b>	Type 4 (IEC 61496)	Type 4 (IEC 61496)
<b>Safety integrity level</b>	SIL3 (IEC 61508) SILCL3 (EN 62061)	SIL3 (IEC 61508) SILCL3 (EN 62061)
<b>Performance level</b>	PL e (EN ISO 13849)	PL e (EN ISO 13849)
<b>Scanning range</b>	0.5 m ... 70 m	0.5 m ... 7.5 m
<b>Number of beams</b>	2 ... 8	2 / 4
<b>Beam separation or resolution</b>	220 mm ... 600 mm	500 mm / 300 mm
<b>Length of the monitored area</b>	-	-
<b>Integrated laser alignment aid</b>	✓ (depending on type)	-
<b>End cap with integrated LED</b>	✓ (depending on type)	✓ (depending on type)
<b>Enclosure rating</b>	IP 65 (EN 60529)	IP 65 (EN 60529)

**At a glance**

- Robust housing with three mounting grooves
- External device monitoring (EDM), restart interlock and application diagnostic output
- Standardized M12 connectivity
- 7-segment display
- Configuration keys located directly on the device



- Sender/receiver in a single housing, scanning range up to 7.5 m
- External device monitoring (EDM), restart interlock and application diagnostic output
- Standardized M12 connectivity
- 7-segment display
- Configuration keys for setting directly on the device
- Beam coding for correct system allocation



Detailed information	→ <a href="http://www.sick.com/M4000_Standard">www.sick.com/M4000_Standard</a>	→ <a href="http://www.sick.com/M4000_Standard_A_P">www.sick.com/M4000_Standard_A_P</a>
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**M4000 Advanced**

Intelligent and efficient: connection of the muting signals directly on site



**M4000 Advanced A/P**

Intelligent and efficient: connection of the muting signals directly on site



**M4000 Area**

Large scanning ranges protect hazardous areas

Type 4 (IEC 61496)

SIL3 (IEC 61508)

SILCL3 (EN 62061)

PL e (EN ISO 13849)

0.5 m ... 70 m

2 ... 8

220 mm ... 600 mm

-

✓ (depending on type)

✓ (depending on type)

IP 65 (EN 60529)

Type 4 (IEC 61496)

SIL3 (IEC 61508)

SILCL3 (EN 62061)

PL e (EN ISO 13849)

0.5 m ... 7.5 m

2 / 4

500 mm / 300 mm

-

-

✓ (depending on type)

IP 65 (EN 60529)

Type 4 (IEC 61496)

SIL3 (IEC 61508)

SILCL3 (EN 62061)

PL e (EN ISO 13849)

0.5 m ... 70 m

-

60 mm / 80 mm

300 mm ... 1,800 mm

-

-

IP 65 (EN 60529)

- Robust housing with three mounting grooves
- Wide scanning range, up to 70 m
- External device monitoring (EDM), restart interlock, application diagnostic output, SDL interface
- Muting in combination with the UE403 muting switching amplifier
- 7-segment display
- Configuration and diagnostics via PC



→ [www.sick.com/M4000\\_Advanced](http://www.sick.com/M4000_Advanced)

- Sender/receiver in a single housing, scanning range up to 7.5 m
- External device monitoring (EDM), restart interlock, application diagnostic output, SDL interface
- Muting in combination with the UE403 muting switching amplifier
- 7-segment display
- Configuration and diagnostics via PC





→ [www.sick.com/M4000\\_Advanced\\_A\\_P](http://www.sick.com/M4000_Advanced_A_P)

- Robust housing with three mounting grooves
- Wide scanning range, up to 70 m
- Resolution 60 mm or 80 mm
- External device monitoring (EDM), restart interlock, application diagnostic output, SDL interface
- 7-segment display
- Configuration and diagnostics via PC
- Beam coding for correct system allocation



→ [www.sick.com/M4000\\_Area](http://www.sick.com/M4000_Area)

	 <p><b>M2000 Standard</b></p>	 <p><b>M2000 Standard A/P</b></p>	
	Economical solution for one-sided or multi-sided protection	Intelligent wiring and maximum availability with a proven industrial design	

**Technical data overview**

<b>Type</b>	Type 2 (IEC 61496)	Type 2 (IEC 61496)
<b>Safety integrity level</b>	SIL1 (IEC 61508) SILCL1 (EN 62061)	SIL1 (IEC 61508) SILCL1 (EN 62061)
<b>Performance level</b>	PL c (EN ISO 13849)	PL c (EN ISO 13849)
<b>Scanning range</b>	0 m ... 70 m	0 m ... 6 m
<b>Number of beams</b>	2 ... 9	2
<b>Beam separation or resolution</b>	116 mm ... 500 mm	500 mm
<b>Enclosure rating</b>	IP 65 (EN 60529)	IP 65 (EN 60529)

**At a glance**

- Robust, industrial housing
- External device monitoring (EDM) and internal self-testing configurable without PC
- Standardized M12 connectivity available
- 7-segment display
- Beam coding for correct system allocation

- Robust, industrial housing
- External device monitoring (EDM) and internal self-testing configurable without PC
- Standardized M12 connectivity is available
- 7-segment display
- Unique A/P version minimize the wiring costs



Detailed information	→ <a href="http://www.sick.com/M2000_Standard">www.sick.com/M2000_Standard</a>	→ <a href="http://www.sick.com/M2000_Standard_A_P">www.sick.com/M2000_Standard_A_P</a>
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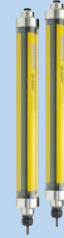
**M4000 Standard in IP69K Housing**

For stringent requirements in terms of hygiene and cleaning



**M4000 Standard A/P in IP69K Housing**

For stringent requirements in terms of hygiene and cleaning



**M2000 Standard in IP69K Housing**

Cost efficient solution for industries with high wash-down requirements

Type 4 (IEC 61496)

SIL3 (IEC 61508)

SILCL3 (EN 62061)

PL e (EN ISO 13849)

0.5 m ... 53 m

3

400 mm

IP 69K, IP 67, IP 66, IP 65 (EN 60529)

Type 4 (IEC 61496)

SIL3 (IEC 61508)

SILCL3 (EN 62061)

PL e (EN ISO 13849)

0.5 m ... 4 m

4

300 mm

IP 69K, IP 67, IP 66, IP 65 (EN 60529)

Type 2 (IEC 61496)

SIL1 (IEC 61508)

SILCL1 (EN 62061)

PL c (EN ISO 13849)

0 m ... 19 m

2 / 3 / 4

500 mm / 400 mm / 300 mm

IP 69K, IP 67, IP 66, IP 65 (EN 60529)

- Withstands wash-down pressure up to 100 bar and water temperature up to 80 °C
- ECOLAB and Diversey certified
- Resistant steel materials
- Ventilation valve prevents fogging of the front screen
- Smooth surfaces prevent accumulation of bacteria



→ [www.sick.com/M4000\\_Standard\\_in\\_IP69K\\_Housing](http://www.sick.com/M4000_Standard_in_IP69K_Housing)

- Withstands wash-down pressure up to 100 bar and water temperature up to 80 °C
- ECOLAB and Diversey certified
- Resistant steel materials
- Ventilation valve prevents fogging of the front screen
- Smooth surfaces prevent accumulation of bacteria
- Unique A/P version for comfortable integration



→ [www.sick.com/M4000\\_Standard\\_A\\_P\\_in\\_IP69K\\_Housing](http://www.sick.com/M4000_Standard_A_P_in_IP69K_Housing)

- Withstands wash-down pressure up to 100 bar and water temperature up to 80 °C
- ECOLAB and Diversey certified
- Resistant steel materials
- Ventilation valve prevents fogging of the front screen
- Smooth surfaces prevent accumulation of bacteria
- Compact design



→ [www.sick.com/M2000\\_Standard\\_in\\_IP69K\\_Housing](http://www.sick.com/M2000_Standard_in_IP69K_Housing)

	 <p><b>WSU/WEU26-3</b></p>	 <p><b>L4000 Systems</b></p>	 <p><b>L41</b></p>
	<p>Rugged, ensures reliability under extreme ambient conditions</p>	<p>Complete system with high availability and short response times</p>	<p>Universal use up to type 4 with safe control solutions from SICK</p>

**Technical data overview**

<b>Scanning range</b>	0.5 m ... 70 m	0 m ... 60 m	0 m ... 60 m
<b>Light sender/type of light</b>	Infrared light	LED / visible red light	LED / visible red light
<b>Construction size</b>	50 mm x 156 mm x 116 mm	M18 / M30	M18 / M30
<b>Supply voltage</b>	24 V DC	24 V DC	24 V DC
<b>Enclosure rating</b>	IP 67 (EN 60529)	IP 67 (EN 60529)	IP 67 (EN 60529)
<b>Ambient operating temperature</b>	-25 °C ... +55 °C	-20 °C ... +55 °C	-40 °C ... +55 °C
<b>Type</b>	Type 4 (IEC 61496)	Type 4 (IEC 61496)	Type 4 (IEC 61496)
<b>Performance level</b>	PL e (EN ISO 13849)	PL e (EN ISO 13849)	PL e (EN ISO 13849)

**At a glance**

- Rugged construction
- Universal application possibilities
- Relay outputs
- Front screen heating

- Small M18 sensors with ranges up to 10 m
- Compact M30 sensors with ranges up to 60 m
- Narrow evaluation device (22.5 mm) with external device monitoring (EDM) and restart interlock (RES)
- Fast response time of max. 30 ms
- Up to 8 sensors can be cascaded

- Small M18 sensors with ranges up to 10 m
- Compact M30 sensors with ranges up to 60 m
- Radial optics (90° deflector mirror)



Detailed information	→ <a href="http://www.sick.com/WSU_WEU26-3">www.sick.com/WSU_WEU26-3</a>	→ <a href="http://www.sick.com/L4000_Systems">www.sick.com/L4000_Systems</a>	→ <a href="http://www.sick.com/L41">www.sick.com/L41</a>
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**L21**

Cylindrical design for safety applications up to type 2



**L27**

Standard type and long ranges for safety applications up to type 2



**L28**

Compact type for optimum integration into safety applications up to type 2



**L29**

Small type for optimum integration into safety applications up to type 2

0 m ... 60 m	0 m ... 25 m	0 m ... 12 m	0 m ... 6 m
LED / visible red light	LED / visible red light	LED / visible red light	LED / visible red light
M18 / M30	24.6 mm x 92.8 mm x 54 mm	17.6 mm x 87.5 mm x 33.5 mm	12.2 mm x 50 mm x 23.6 mm
24 V DC	24 V DC	24 V DC	24 V DC
IP 67 (EN 60529)	IP 67 (EN 60529)	IP 67 (EN 60529)	IP 65, IP 66, IP 67, IP 69K (EN 60529)
-40 °C ... +55 °C	-40 °C ... +60 °C	-40 °C ... +60 °C	-40 °C ... +60 °C
Type 2 (IEC 61496)	Type 2 (IEC 61496)	Type 2 (IEC 61496)	Type 2 (IEC 61496)
PL c (EN ISO 13849)	PL c (EN ISO 13849)	PL c (EN ISO 13849)	PL c (EN ISO 13849)

- Small M18 sensors with ranges up to 10 m
- Compact M30 sensors with ranges up to 60 m
- Metal and plastic version
- Radial optics (90° deflector mirror)
- Straightforward diagnostics and service



→ [www.sick.com/L21](http://www.sick.com/L21)

- Compact size with ranges up to 35 m
- Integrated heating



→ [www.sick.com/L27](http://www.sick.com/L27)

- Compact size with ranges up to 18 m
- Plastic housing, ABS





→ [www.sick.com/L28](http://www.sick.com/L28)

- Very small housing dimensions (50 mm x 23,6 mm x 12,2 mm)
- Ultra-rugged VISTAL™ housing
- Ecolab tested material resistance



→ [www.sick.com/L29](http://www.sick.com/L29)

			
	<b>Mirror columns with protective field height mirror</b>	<b>Mirror columns with separate mirrors</b>	
	Smart multi-sided protection of the area around hazardous points	Smart multi-sided protection of the area around hazardous points	

**Technical data overview**

<b>Model</b>	Mirror columns with protective field height mirror	Mirror columns with up to 4 adjustable individual mirrors	
<b>Suitable for</b>	Safety light curtains Multiple light beam safety devices	Multiple light beam safety devices	
<b>Suitable for protective field height</b>	≤ 1,800 mm	-	
<b>Suitable for number of beams</b>	Any	2 / 3 / 4	
<b>Suitable for beam separation</b>	Any	300 mm ... 600 mm	
<b>Mirror length</b>	1,082 mm ... 1,832 mm	90 mm	
<b>Mirror width</b>	125 mm	100 mm	
<b>Column height</b>	1,281.5 mm ... 2,216.5 mm	985 mm / 1,185 mm / 1,285 mm	

**At a glance**

- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Simple mounting and adjustment
- Large reflector surface for efficient multi-sided protection via beam deflection and high availability
- Mirror columns in various lengths



- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Easy mounting and adjustment
- Large reflector surface for efficient multi-sided protection via beam deflection and high availability
- Mirror columns in various lengths



Detailed information	→ <a href="http://www.sick.com/Mirror_columns_with_protective_field_height_mirror">www.sick.com/Mirror_columns_with_protective_field_height_mirror</a>	→ <a href="http://www.sick.com/Mirror_columns_with_separate_mirrors">www.sick.com/Mirror_columns_with_separate_mirrors</a>	
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**Device columns with external grooves**

Smart solutions for access and area protection



**Device columns for outdoor use**

Heatable front screen for a clear view

Device columns with  
two external mounting grooves  
Safety light curtains  
Multiple light beam safety devices  
≤ 2,100 mm

Any

Any

-

-

985 mm ... 2,420 mm

Device columns with  
front screen heating for outdoor use  
Multiple light beam safety devices

-

3 / 2

400 mm / 500 mm

-

-

1,223 mm

- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Simple mounting and adjustment
- Device protection against external influences

- Use of heatable front screen in outdoor areas
- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Easy mounting and adjustment
- Device protection against external influences
- Applicable for multiple light beam safety devices



→ [www.sick.com/Device\\_columns\\_with\\_external\\_grooves](http://www.sick.com/Device_columns_with_external_grooves)



→ [www.sick.com/Device\\_columns\\_for\\_outdoor\\_use](http://www.sick.com/Device_columns_for_outdoor_use)

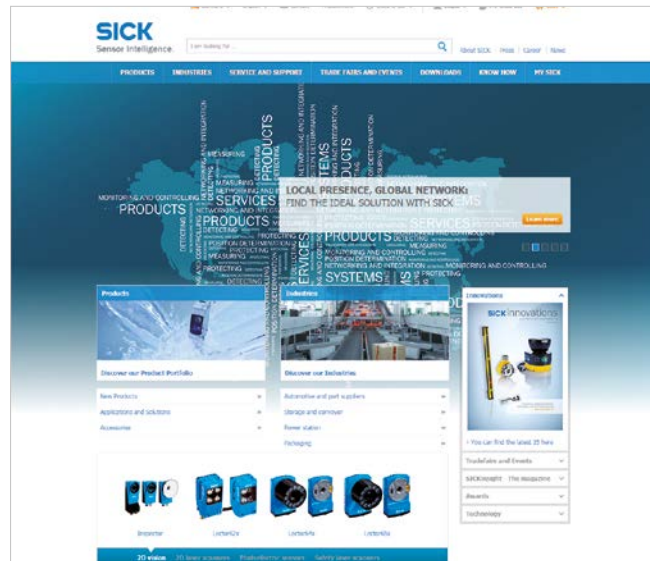






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- ✔ Easily repeat previous orders.
- ✔ Conveniently export quotations and orders to work with your systems.



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- 
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 Safe and professional
- 
**Product and system support**  
 Reliable, fast and on-site
- 
**Verification and optimization**  
 Safe and regularly inspected
- 
**Upgrade and retrofits**  
 Easy, safe and economical
- 
**Training and education**  
 Practical, focused and professional

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → [www.sick.com](http://www.sick.com)